Engineering Review

World's Fair Exhibits

Outstanding contributions of basic science to all fields of industrial activity will be presented and explained to the public as one of the highlights of the great Hall of Science at A Century of Progress which opens in Chicago on May 26.

Continuation of the scientific exhibits presented by Union Carbide and Carbon Corporation at the World's Fair was assured this week with the announcement that contracts for exhibit space had been signed. In keeping with the progressive nature of "A Century of Progress" numerous changes have been planned to make the UCC exhibits a still more popular "center of interest" of the Hall of Science.

In cooperation with A Century of Progress, the popular basic Science Exhibits—"Story of Air" and "Story of the Electric Furnace" will again be portrayed. The "Liquid Air Demonstrations" which played to capacity audiences all last summer are to be repeated. Additional provisions are being made to take care of the many people who throng to this entertaining and instructive feature. The lectures and demonstrations will be given on a continuous schedule this year so that everyone who desires can attend.

The results of scientific progress translated into actual products and processes will be demonstrated on the first floor of the Hall of Science in the Applied Science Division. The oxy-acetylene process for joining and cutting metals, one of the great contributions of science to modern industry, will be vividly displayed in a circular welding arena. Actual operations will be carried on before the visitor.

The development of ferrous and non-ferrous alloys will be interestingly shown by means of operating demonstrations and sound motion pictures. The famous "red hardness" demonstration of the non-ferrous alloy, Haynes Stellite, will be shown in the Applied Science Division.

The principal units of Union Carbide and Carbon Corporation, whose products and activities will be displayed in the Applied Science Division, include National Carbon Company, Inc., The Linde Air Products Company, Union Carbide Company, The Prest-O-Lite Company, Inc., Carbide and Carbon Chemicals Corporation, Oxweld Acetylene Company, Acheson Graphite Corporation, Electro Metallurgical Company, Haynes Stellite Company, and Union Carbide and Carbon Research Laboratories, Inc.

Air Conditioned Vault

After a season's operation the Continental Safe Deposit Company's air conditioned vault, located two stories below the street level in the heart of New York City's financial district, has proven a means of attracting new tenants and retaining old ones. Operating expenses were low, consuming only about twice as much electric power as taken for lights and other electric services in the building. This expense amounts to only a few cents per tenant and is returned many times in satisfaction and good will of customers, according to officials.

The engineering features of this Westinghouse installation are of interest. Because thick steel wholly enclose the vault, air ducts or similar permanent openings were out of the question. The Metropolitan Air Conditioning Company decided to take advantage of the existing ventilation system in which a blower located on the building's third subfloor delivered filtered air through the ducts to the vault on the floor above.

The air conditioner's condensing unit was installed adjacent to the blower. Two evaporators or cooling coils were placed within the air duct on the suction side of the blower and two others on the discharge duct located outside vault side door.

A novel method conducts the conditioned air into the vault. There are two temporary openings to the vault; a large main door at the front, and a smaller emergency door, about four feet in diameter and four feet thick, in the side wall.

When the main vault door is opened for business, the emergency door is also swung open. A large elbow of pipe, about four feet in diameter, is then raised into position over the emergency doorway, connecting the external duct system to the vault. From this doorway another system of ducts distributes the cooled air within the vault, discharging the air through a number of grilles located around the edges of the low ceiling. No return system is used, the exhaust air passing out through the vault's main door.

Because electric current is measured by a separate meter, vault officials were able to keep an accurate record of the air conditioner's operating cost. Since put in operation in the latter part of July, 1933, it has only consumed approximately three times as much electrical current as lights, fans, electric clocks, blowers, etc., combined.

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